

Remarks/Arguments

Claims 18-33 are now pending in this application, Claims 9-17 having been withdrawn. Claims 18-31 remain unchanged and new Claims 32 and 33 are added.

The Office Action contains a single rejection of claims namely a rejection of Claims 18-31 under 35 U.S.C. 103(a) as being unpatentable over Pernick in view of MacIntyre. Pernick was cited for disclosing all the elements of the claims except for linking threads. MacIntyre was cited for spaced woven layers. The Office Action asserts obviousness "to employ filling threads of the woven fabric of MacIntyre . . . in the fabric of Pernick motivated with the expectation that the spacing between layers would give improved wicking."

Before addressing the broad scope of the above rejection as applied to original Claims 18-31, applicant wishes to focus on new independent Claims 32 and 33 which correspond generally to original Claims 22 and 25 respectively.

It is respectfully submitted that the above-referenced rejection would not be a proper basis for rejecting Claims 32 and 33, as explained below. These claims and various others in this application are directed to garments to protect at least a portion of the human body or substantially the full body from adverse environmental conditions, particularly adverse heat conditions. The present invention is particularly useful for survival garments or suits as used in military, civil security or excursion domains in the so-called NBC (nuclear, biological and chemical), ballistic, bad weather and severe adverse environmental conditions. Garments as used in the above described conditions are for persons who are actively in motion, where the garments are subject to bending in various directions and pinching.

One specific object of the present invention is to provide a three-dimensional fabric, as described in the specification, which maintains certain spacing between layers, even when the garment is subject to compression due to the person's motion or due to constant or intermittent force from contact with heavy equipment being carried by a person wearing such a garment.

The present invention as set forth in Claims 32 and 33 provides a new fabric which has been disclosed in the specification and drawings of this application. This fabric, with its resilient link threads and its discontinuous stitching, provides air flow passageways and strength to resist crushing in various conditions described.

The Examiner's rejection is based upon combining disclosures of Pernick and MacIntyre. Pernick is aimed at solving a very specific problem, since it deals with fabrics intended for incontinent individuals such as elderly people and young children, especially bed ridden persons (see column 1, lines 19-35) and material for bed pads (col. 1, line. 60), and bedding articles or the like (col. 2, line. 20).

The Examiner acknowledges the fact that Pernick is silent about the linking threads, which is an important structural element in the present invention. Pernick discloses a material consisting of two faces with similar constructions (see Figure 2) and without any linking threads or equivalent and without any need or use for same. Pernick's Fig. 2 shows no discontinuities in the construction at the internal and external faces. Pernick's Figure 1 clearly illustrates an homogeneous material. In contrast the present invention, as exemplified in Figs. 2 and 4, has openings and where discontinuities occur.

MacIntyre deals with inflatable fabrics for tent and housing structures. MacIntyre discloses a material whose layers 10 and 11 are of similar construction (see col. 2, lines 1-3) which also evidenced in figures 1, 2 and 3. MacIntyre discloses no discontinuities, as viewed in cross-sectional views.

Applicant respectfully submits that neither of these cited prior art patents would provide any suggestion to a person of ordinary skill in the art to alter their fabrics to have discontinuities or to have linking threads of the present invention. Neither reference discloses any concern or interest in special fabric for adverse environmental conditions nor in any fabric subject to the movement and bending of the present invention. These cited prior art patents deal with totally different problems encountered in quite different situations, namely (a) static conditions in prior art versus dynamic conditions in the invention and (b) individual personal conditions versus adverse

environmental conditions, etc. Indeed, for a person of ordinary skill in the art Pernick and/or MacIntyre would not be obvious choices since they disclose materials structurally different from ones needed to solve the problems of the present invention, namely the new problems of individuals wearing survival equipments in extreme conditions (hot, cold, contaminated), with multiple pressures exerted locally as by straps and/or belts of an individual rucksack or by larger surfaces such as a bullet-proof jacket or vest.

In the preferred embodiments as seen in Figs. 2 and 4 of the present application there is disclosure of a material having one of its sides displaying a different construction with the presence of openings referenced 8. These openings are particularly useful, notably where designed as ducts or channels for promoting a stack chimney effect to improve the air circulation. In this three-dimension material air circulation can occur through the linking threads and in the ducts or channels (stack effect). In Figures 2 and 4 layers 1 and 6 are dissociated. Material of layer 6 is not linked to the three-dimensional material whereby air circulation is facilitated, but also and importantly said material allows one to associate a tissue or a mesh displaying characteristics that differ from the three-dimensional material characteristics.

The present invention concerns a variety of conditions and objectives, namely the quest for properties as toughness (see page 3, line 14 of the specification), anti-shock (page 3, line. 20 of the specification), bending modulus (page 3, line 23), good strength against compression (page 3, line 25) and reducing the back effect in a bullet-proof vest, and protection as an antitrauma layer (page 5, lines 31-33). Applicant again respectfully submits that it would not be obvious for a person skilled in the art to look for any such teachings in the cited prior art documents analyzed above.

Furthermore, claims 32 and 33 and Claims 18 through 31 are operable with air circulation means, which is absent and not suggested in the cited prior art. To provide protection against heat is a key objective of the present invention. Air circulation is mandatory to combat hyperthermy of a person. This air circulation that may be carried out either by natural convection or by forced convection and allows inflow of new air whereby water saturation of the micro-climate is avoided. Liquid sweat

evaporation is only made possible there exists a gradient of water-vapor pressure between the skin (100% humidity) and the micro-climate taking place inside the garment.

It is thus very important that the new three-dimensional material includes a plurality of openings as generally disclosed herein. Furthermore, these openings display a good resiliency whereby crushing of the three-dimensional material is avoided. As taught in a preferred embodiment of the present invention, openings 8 which promote air-circulation are provided and are not suggested in any cited prior art.

In view of the remarks above, it is respectfully submitted that the invention of the present application is patentably distinguishable over the cited prior art. It is further submitted that the discussion herein as applied to Claims 32 and 33 is similarly applicable to Claims 18-31, which should also be considered allowable.

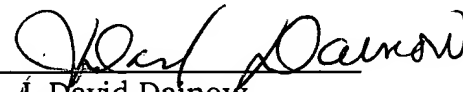
In view of the above amendments and remarks, reconsideration of the rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

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